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Dr. Airy's Report to the Local Government Board on the Sanitary State of the Neath Registration District.

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The Registration District (which is the same as the Poor Law Union) of Neath is situated chiefly in the western part of Glamorganshire, extending also into the southern part of Brecknockshire, and occupies (generally speaking) the whole drainage-area of the river Neath, except a portion in the north-east belonging to the Merthyr Tydfil Union. It also includes the valley of the Avon to the south-east, and stretches eastward over the mountains into the watershed of the river Llynvi. It adjoins the Swansea and Pontardawe Unions on the west and north-west, the Brecon Union on the north, the Merthyr Tydfil, Pontypridd, and Bridgend Unions on the east, and its south-western border forms part of the coast-line of Swansea Bay.

The Neath Registration District, as at present constituted, comprises four sub-districts for registration purposes, namely, Margam in the east, Neath in the centre, Ystradvelley in the north, and Cadoxton in the west. The district was formerly much more extensive. Previous to the 1st of July 1876 it included also the sub-district of Llansamlet, to the west of Cadoxton. (This now forms part of the Swansea Union.) Again, previous to the 1st of July 1875, it possessed also a sixth sub-district, Ystradgynlais, at the head of the Vale of Tawe, which, with two parishes taken from the Cadoxton sub-district, and two from the Swansea Union, went to form the new Union of Pontardawe.

The Sanitary Districts included within the bounds of the Neath Registration District are three urban and one rural :—

1. The Neath Urban Sanitary District, co-terminous with the municipal borough, comprising the whole of the parish of Neath in the Neath Registration Sub-district and a small part of the civil parish of Blaenhonddan in the Cadoxton sub-district.
2. The Briton Ferry Urban Sanitary District, co-terminous with the parish of the same name, in the Neath registration sub-district.
3. The Aberavon Urban Sanitary District, co-terminous with the municipal borough of Aberavon, in the Margam registration sub-district.
4. The Neath Rural Sanitary District, comprising the whole of the Union excepting the three Urban Districts above named.

With the exception of a belt of limestone in the hills on the northern border, the whole Neath district lies in the great South Wales coal-field. The mountain ranges which bound the Neath and Avon valleys rise in some parts to a height of 1,800 feet above the sea ; they consist throughout of various strata of sandstone alternating with seams of coal and shale. The sandstone beds furnish building stone of various qualities and flags for pavement. Coal and iron mines have long been actively worked at numerous points both in the valleys and up in the hills. At present the activity of the mining operations is much diminished by the depression of trade.

The coal mines form the chief wealth of the district, and, together with copper works, tin-plate works, and various other works depending on the coal, give employment, directly or indirectly, to the greater part of the population. Others are employed in agriculture, trades, shipping, and railway works.

The Registration District as now defined, with an area of 115,464 acres, had in 1871 a population of 44,063 ; in 1861 the numbers were 39,384. At the present time, if we

suppose the same rate of increase to have been maintained since 1871, the population of the district may be estimated at 47,000. During the period of exceptional prosperity in the coal and iron trades, from 1872 to 1875, the population probably rose more rapidly than at other periods.

The late Medical Officer of Health for the Neath Rural Sanitary District (Mr. E. R. Morgan) made a careful estimate of the population of every parish in his district for the year 1874, based upon the number of inhabited houses on the rate-book for that year and the average number of inhabitants per house as given at the census of 1871. I have used this estimate to check the population of the registration district as now constituted, and obtained confirmation within small limits of the estimate given in the preceding paragraph and of others which will be adopted in this report.

The prevalent rates of mortality in the several sub-districts of the Neath Registration District, calculated from the Quarterly Returns issued by the Registrar-General, beginning with the year 1870, are shown in the following Table (I).

The data for the Margam, Neath, and Ystradfelltey sub-districts extend over the seven years 1870–1876, and the population is estimated for the year 1873, as being the middle year of that period. For the Cadoxton sub-district, the limits of which were altered in 1875, and also for the whole registration district, the data can only be used for the five years 1870–1874, and the mean population is accordingly estimated for the year 1872.

TABLE I.—MORTALITY from all CAUSES (in Sub-districts).

	Estimated Population.				
	Margam, in 1873, 16,600.	Neath, in 1873, 18,000.	Ystradfelltey, in 1873, 3,660.	Cadoxton, in 1872, 8,690.	Whole District in 1872, 46,635.
1870 - - -	428	472	59	184	1,143
1871 - - -	323	514	82	204	1,123
1872 - - -	368	405	48	230	1,051
1873 - - -	366	381	64	193	1,004
1874 - - -	397	409	90	195	1,091
1875 - - -	366	554	85	[248]	[1,253]
1876 - - -	319	373	62	[130]	[884]
Average of seven years	367	444	70	(first five years) 201	(first five years) 1,082
Average death-rate per 1,000 living - }	22.1	24.7	19.1	23.1	23.2

The share which has been borne by diseases of the zymotic class in swelling the annual mortality (especially in the years 1870–72) will appear from subsequent tables. Among other causes of death tubercular diseases (especially phthisis), pulmonary inflammations (especially chronic bronchitis), and infantile convulsions are chiefly conspicuous in the local death-registers; to each of these three classes of disease is attributed an annual average of about 3.5 deaths for every 1,000 living. The prevalence of phthisis is probably to be taken in connexion with the excessive rainfall to which this part of the country is subject, and the general dampness of habitations.

I learn from Mr. Morgan's report, above alluded to, that the average rainfall in 1873 and 1874 was more than 50 inches, or more than double that which is registered in the east of England.

Bronchitis in a chronic form is a disease to which miners are especially liable, partly owing to irritation of the lungs by the dust with which the air they breathe is charged, and partly on account of the severe changes of temperature they undergo in the course of their daily life.

Excessive infantile mortality from convulsions points, in all probability, to want of proper nursing and proper food.

These conspicuous features in the mortality in the Neath District, which I know to be exactly represented in the adjoining district of Pontypridd, are probably common to the whole of the mining districts in Wales.

By the courtesy of the Superintendent Registrar of the Neath District in furnishing me with separate returns of mortality (from 1870 to 1874) for the three parishes of Neath, Briton Ferry, and Aberavon (which correspond, the first approximately, the other two exactly, to the Urban Sanitary Districts of the same name), I am enabled to give the following Table (II.), showing the average death-rates in the several sanitary districts which are included in the Neath Union.

TABLE II.—MORTALITY from all CAUSES (in Sanitary Districts).

	Estimated Population in 1872.								
	Neath Urban S. D., 9,500.	Briton Ferry Urban S. D., 4,920.	Aberavon Urban S. D., 3,450.	Neath Rural S. D., 28,725.	Parts of Neath Rural S. D. in different Sub-districts.				Cadoxton, 8,650.
					Margam, 13,225.	Neath, 3,170.	Ystradfelltey, 3,630.		
1870	-	299	124	53	667	375	49	59	184
1871	-	306	163	52	602	271	45	82	204
1872	-	253	113	60	625	308	39	48	230
1873	-	206	112	65	621	301	63	64	193
1874	-	289	107	65	690	332	13	90	195
Average of five years		270	124	59	641	317	42	68	201
Death-rate -	-	28·2	25·2	17·1	22·3	24·0	13·2	18·9	23·2

Further reference will be made to these results when the local conditions of each district are described. I will here only draw attention to the very high rate of mortality which has prevailed in the Neath and Briton Ferry Urban Sanitary Districts.

The number of deaths registered in each registration sub-district from each of the seven principal diseases of the Zymotic class is given in the following Table (III.), and of these the numbers belonging to the several sanitary districts comprised in the Union are given in Table IV. :—

TABLE III.—MORTALITY from SEVEN ZYMOTIC DISEASES (in Sub-Districts).
(M.=Margam. N.=Neath. Y.=Ystradvelta. C.=Cadoxton.)

	Small-pox.			Measles.			Scarlet Fever.			Diphtheria.			Whooping Cough.			Fever.			Diarrhoea.						
	M.	N.	Y.	C.	M.	N.	Y.	C.	M.	N.	Y.	C.	M.	N.	Y.	C.	M.	N.	Y.	C.					
1870 i.	-	-	-	-	-	-	-	-	47	16	1	-	-	-	-	1	11	4	2	2	-	-			
ii.	-	-	-	-	-	-	-	-	33	54	4	-	-	-	-	-	10	6	-	-	-	-			
iii.	-	-	-	-	-	-	-	-	14	36	4	7	-	-	-	-	5	2	-	-	-	-			
iv.	-	-	-	-	-	-	-	-	41	41	8	-	-	-	-	-	1	1	-	2	2	-			
1871 i.	-	-	-	-	-	-	-	-	7	6	4	5	-	-	-	-	2	2	2	2	-	-			
ii.	-	-	-	-	-	-	-	-	2	2	1	1	-	-	-	-	1	1	-	1	-	-			
iii.	-	-	-	-	-	-	-	-	7	6	4	3	-	-	-	-	1	1	-	1	-	-			
iv.	-	-	-	-	-	-	-	-	10	5	2	10	-	-	-	-	4	4	-	4	-	-			
1872 i.	-	-	-	-	-	-	-	-	29	11	1	-	-	-	-	-	6	2	2	2	-	-			
ii.	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	7	2	1	1	-	-			
iii.	-	-	-	-	-	-	-	-	19	2	-	1	-	-	-	-	8	2	1	1	-	-			
iv.	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	7	2	1	1	-	-			
1873 i.	-	-	-	-	-	-	-	-	30	2	-	1	-	-	-	-	1	9	-	-	-	-			
ii.	-	-	-	-	-	-	-	-	11	1	-	1	-	-	-	-	3	7	3	3	-	-			
iii.	-	-	-	-	-	-	-	-	48	6	10	5	-	-	-	-	11	6	2	3	-	-			
iv.	-	-	-	-	-	-	-	-	11	2	-	1	-	-	-	-	2	1	1	1	-	-			
1874 i.	-	-	-	-	-	-	-	-	4	6	1	-	-	-	-	-	14*	5	-	-	-	-			
ii.	-	-	-	-	-	-	-	-	36	1	1	-	-	-	-	-	17	4	3	3	-	-			
iii.	-	-	-	-	-	-	-	-	5	1	-	1	-	-	-	-	8	2	1	4	-	-			
iv.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	5	4	4	5	-	-			
1875 i.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	1	2	2	2	-	-			
ii.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	12	1	5	5	-	-			
iii.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	3	6	2	2	-	-			
iv.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	1	2	1	1	-	-			
1876 i.	-	-	-	-	-	-	-	-	4	8	1	4	-	-	-	-	1	2	4	4	-	-			
ii.	-	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	1	1	2	1	-	-			
iii.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	1	1	1	1	-	-			
iv.	-	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	1	1	1	1	-	-			
1877 i.	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	3	6	5	3	-	-			
Annual average, 1870-1876	27	231	16	96	28	106	03	40	307	333	27	140	00	16	06	61	90	41	185	137	58	43	84	3	
Average annual death-rate	0.16	1.28	0.43	0.75	0.17	0.59	0.08	0.35	1.85	1.85	1.73	1.69	0.00	0.00	0.07	0.36	0.50	0.11	0.46	1.11	0.76	1.03	0.66	0.47	0.08

* At Taibach.

Chango in Cadoxton sub-district.

1 cholera in Margam.

TABLE IV.—MORTALITY from SEVEN ZYMOTIC DISEASES (in Sanitary-Districts).

	A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.		
Estimated population (1872)	-	9,550	-	-	-	4,920	-	-	-	3,450	-	-	-	-	-	-	-	-	-	23,675.		
A.	1	49	9	1	6	57	12	2	74	43	7	155	3	4	5	2	1	5	7	4		
B.	-	34	13	-	41	65	5	1	17	46	1	36	1	3	1	1	1	1	12	9		
C.	-	-	1	-	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	8	
D.	-	-	-	-	10	2	5	1	23	4	1	23	1	3	1	1	1	1	6	8		
Average annual death-rate per 1,000 living	1.7	0.9	0.06	0.9	0.3	0.6	0.1	0.4	1.7	2.4	1.6	1.9	0.2	0.5	0.4	0.6	0.1	0.2	1.1	0.5	0.6	0.2

Small-pox, it is seen, was excessively fatal in the winter of 1871-72, especially in the Neath and Cadoxton sub-districts. Measles prevailed at the same time. Scarlet fever in the year 1870 carried off 255 persons in the Margam and Neath sub-districts. In the former it was again severely felt in the last quarter of 1872, and has continued in both those sub-districts with little intermission up to the present time. In the Cadoxton sub-district this disease prevailed in the years 1870-71 and 1875, and has proved fatal in several cases in the present year.

Diphtheria, in a fatal form, appears to have been confined to the Neath and Cadoxton sub-districts. Two deaths from this disease were registered in the first quarter of the present year, along with four deaths from croup. In the last quarter of the previous year there had been five deaths registered from "croup" and five from "diphtheritic croup." It would seem probable that there was in fact a rather severe outbreak of diphtheria.

Whooping-cough has prevailed year after year, now in one part of the district, now in another, but rarely in the Ystradvelta sub-district. During the last four quarters no death from this disease has been registered in the Union.

Fever, including typhus, typhoid or enteric, and simple continued fever, has not failed in any quarter of the last seven years, to take its toll of victims from one part or another of the district under view. The death register for the Margam sub-district can show only two quarters in that period without a death from fever. The Neath register can show only one. The other two sub-districts have suffered also in nearly the same proportion to their population. The records of mortality from this form of disease throughout the Neath Union are distinguished by their uniformity and constancy, by the narrowness of the limits within which they vary from quarter to quarter. Taking the annual totals for the whole Union, it is seen that they vary very little in the first four years of the period under consideration; in 1874 the numbers reach their highest, and decline in the two following years 1875 and 1876 below their former average. But while the general fever mortality in the whole Union has declined in the last two years, it is to be noticed that in one sub-district (Neath) the deaths from fever were in 1876 more numerous than in any previous year. It was in view of, and with especial reference to, this marked increase of fever mortality in the Neath sub-district that inquiry into the sanitary condition of the whole district was ordered by the Local Government Board. During the six years 1870-75 the average annual number of deaths from fever in the Neath sub-district had been 12·8, but in 1876 the number registered was 19. Of these 19 it appeared on examination of the death register that eight had been registered in the parish of Neath (population estimated at 12,000), 10 in the parish of Briton Ferry (population estimated at 5,000), and one in the parish of Llantwit. The numbers for Neath and Briton Ferry are equivalent to a fever death-rate of 0·67 and 2·00 per 1,000 living, respectively. In previous years these two parishes had had exactly an equal death-rate (0·65) from fever. In 1876, in the parish of Neath, the fever death-rate of previous years was only very slightly exceeded; but in Briton Ferry that rate was more than trebled. Accordingly it will be necessary to pay especial attention (below) to the sanitary state of the Briton Ferry (Urban) district. Of the eight fever deaths belonging to Neath parish, and of the 10 belonging to Briton Ferry, two in each parish were registered as "typhus," the rest as typhoid or enteric. In the present year it appears that in January there were three deaths from "typhus" and two from "typhoid" or enteric in Briton Ferry; in February there was one death from "typhoid" in Llantwit, and another in the same parish in March. Again, in Briton Ferry there was one death from "typhoid" in April. The number of deaths registered from "typhus" is a noticeable feature in these returns. Looking back to former years (1870-74) I find that in the three parishes of Neath, Briton Ferry, and Aberavon, out of a total of 74 deaths from fever, 15 were registered from "typhus," 41 from "typhoid" or "enteric," and 18 from "continued fever." Of the "typhus" cases there is reason to think that not a few were really cases of enteric fever, especially such as were found in close relation with other undoubted cases of the latter disease. But it is believed that there was last winter an outbreak of genuine typhus at Briton Ferry. The cases were described to me by the medical practitioner in whose practice they had occurred as characterized by a decided crisis about the end of the second week of the disease, by marked cerebral symptoms and by absence of diarrhoea. At the same time it did not appear that the domestic conditions in these cases were of a nature likely to foster typhus fever. The dwellings in which the disease had appeared were not overcrowded. The first case occurred in a young man employed in the ironworks who slept with another lodger in a room of fair size, fairly ventilated, in the town of Briton Ferry. The fellow lodger did not take the disease. The number of cases in this outbreak

recognized as typhus in Briton Ferry was five, all fatal. In three, death took place on the 21st day, in one on the 48th, and in one on the 9th. The long duration of the disease in four cases certainly suggests the question whether after all it may not have been enteric fever, of which there was a great deal in Briton Ferry at the same time; in these cases, however, the fatal result was attributed to a relapse after passing the crisis of the disease.

In the parish of Aberavon, the average annual fever death-rate has been 1·5 per 1,000 living. This is higher than the corresponding average for any one of the other Sanitary Districts; and is the more noticeable because the general death-rate (from all causes) in Aberavon has been very much lower than that in the other districts. In 1872, the deaths registered from different forms of fever in Aberavon were 12, giving a fever death-rate for that year of 3·4 per 1,000 living.

In the Neath Rural Sanitary District at large the average annual fever death-rate has been 1·1. It might be supposed that this high death-rate has been mainly levied on the crowded villages round the chief coal mines, and iron, tin, and copper works, as at Taibach, Cwmavon, and Skewen, and no doubt these have contributed their full share; but if we examine the death-rate for the Ystradfellta sub-district, which has most of the agricultural, and least of the mineral, industry, we see that the fever death-rate there (1·09) almost equals that in the Margam sub-district, in which Taibach and Cwmavon are situated, and greatly exceeds that for the Cadoxton sub-district which contains the large mining village of Skewen. It is evident that fever, especially enteric fever, haunts and has long haunted the whole district, hamlet, village, and town. The records of past years show that there has been an unfailing renewal of the infection, and therefore of the infective agent, from quarter to quarter and from year to year.

It should be remembered that enteric fever is especially a disease which keeps itself alive under those conditions of human habitation which Sanitary Authorities are expressly appointed and legally empowered to prevent or control.

In the following pages the local conditions of each Sanitary District are separately considered.

NEATH URBAN SANITARY DISTRICT.

The municipal borough, which forms the Urban Sanitary District, of Neath, comprises the parish of Neath (1,121 acres) in the Neath registration sub-district, on the south-east side of the river of that name, and a small portion (306 acres) of the civil parish of Blaenrhonddan in the Cadoxton sub-district on the opposite side of the river. In 1871 the population of Neath parish was 9,258, and of the portion of Blaenrhonddan 61. The population of the borough is now estimated at 12,000.

The Sanitary Authority is the Town Council, who meet once a month regularly, and more frequently if occasion requires. The Medical Officer of Health, Dr. George Ryding (not under the Local Government Board's Order) has held office since January 1873. His salary is 30*l.* a year. The Inspector of Nuisances, Mr. W. Whittington, who is also Borough Surveyor, receives a salary of 150*l.* for the two offices combined.

The town stands about two and a half miles from the mouth of the river on a bed of gravel which stretches from the foot of the Gnoll hill to the river bank. On the side towards the estuary the gravel passes into clay. The river is tidal for some miles above the town.

The dwellings, chiefly built of the sandstone of the district and roofed with slate, are for the most part of good construction; but exceptions are found in the older and poorer parts of the town, where there are some cottages without back doors or back windows, in fact altogether without means of ventilation. The same evil, in less degree, is seen in the cramped space, which serves for backyard to many of the houses. There are not many houses built actually back to back. Roof drainage in most parts of the town is fairly well provided for, but to this rule also there are exceptions.

Noting that phthisis is the prevalent disease of the district, and that phthisis is especially encouraged by dampness of house foundations and floors and walls, it is most important that all care should be taken to provide for the rapid escape of rain-water, especially in a part of the country where the rainfall is notoriously excessive. Eaves-troughing and careful paving at the foot of the wall ought to be regarded as a necessity.

The town was thoroughly sewer'd on a comprehensive plan in 1865. The sewers converge to one common outfall and give into the river just below the town bridge. The mouth of the sewer lies between high and low water level, and is guarded by a flap-valve which in great measure prevents the entrance of water from the river at the rise of the tide. But either by entrance of water from without, or by accumulation of sewage within, there is sure to be a filling of the lowest portion of the sewer, and a forcing back of the air which occupies the higher portion. There does not appear to be any provision for the escape of the back-forced air, except in doubtful cases here and there, where a rain-pipe is believed to communicate directly with the sewer. Under these conditions there is a probability that sewer-air frequently makes its escape in the houses at defective traps and closet pans and sink-holes; and for want of free ventilation the sewer-air is sure to acquire a more poisonous quality than if it were freely diluted. In all probability it has been chiefly through the agency of sewer-air escaping from these unventilated sewers that enteric fever has continued prevalent in the town. For flushing the sewers from time to time water is laid on from the waterworks.

In general the sewers have a moderate fall, but in one part of the system, where several new streets descend from the Briton Ferry road towards the marshes, the sewer is too flat. Special provision of flushing tanks was to be made at the heads of two of these streets; but it will probably be found necessary to arrange for the separate disposal of the sewage from this part of the district. There is reason to think that the drainage of the district might have been made more complete if the outfall of the sewer had been originally placed some distance lower down the river.

Scavenging is efficiently carried out; the people bring their dust and house-refuse to the edge of the pavement in the morning, and the scavengers remove it in their rounds.

Water-closets in communication with the sewers are now in general use in the town; some of them require to be flushed by hand, and are sometimes choked. Where the old system of seats over cesspits still remains, the well-known nuisances arising from neglect of removal of the contents are found. I noticed this in a row of cottages between the canal and the river.

Water for all purposes is supplied to the people of Neath by a private company, who have three large ponds in the extensive grounds belonging to Gnoll Castle. These reservoirs are all at such a height that the town supply is delivered under great pressure. Two of them only (the two largest and highest) are in ordinary use. Until recently the water was delivered unfiltered, and was open to the suspicion that it contained a good deal of vegetable organic matter from the decay of the leaves from the thick woods on the hill-side immediately behind the ponds. Recently, however, the company have constructed a pair of filtering beds and an open storage basin. The water has since been analysed by Professor Wanklyn, who reports it to be a very good water. I saw no reason to suspect any contamination from sewage. As regards the sufficiency of the supply for the growing wants of the town of Neath, I have not been able to obtain full information. The water company have extended their mains to Briton Ferry, and now propose to supply that town as well; but it is apprehended that the quantity at their disposal will be found insufficient. On this point further information is desirable.

The Sanitary Authority have no means of isolating any case of infectious disease; neither have they any means of disinfecting clothes, or bedding, or other articles, except by the mere distribution of disinfectant powders and fluids.

The town possesses a public slaughter-yard in the outskirts, which, when first built was reasonably distant from any dwelling; but recently houses have sprung up in this quarter, and there is some likelihood that the slaughter-yard will be found a nuisance. Complaint has already been made to that effect. It appeared to me that the yard might be kept in better order; at one corner there is a pool to receive the drainage and washings, which are from time to time removed by cart across an adjoining field to be used on a farm. The ground about this pool was broken up and soaking with filth. This corner of the yard was exceedingly offensive.

BRITON FERRY URBAN SANITARY DISTRICT.

This district comprising the parish of Briton Ferry, which had a population of 3,781 in 1861, and 4,803 in 1871, is now estimated to contain about 5,000 inhabitants. It is under the jurisdiction, for sanitary purposes, of a Local Board (founded in 1865) of nine members, who meet once a month. Their Medical Officer of Health, not under the

Order of the Local Government Board, is Mr. Charles Pegge, appointed in April 1876, at a salary of 10*l.* a year. The Inspector of Nuisances, who is also Town Surveyor, receives a salary of 20*l.* in the former capacity and 40*l.* in the latter.

The town of Briton Ferry is situated at the mouth of the Neath river, on the east side; part of it, around the Briton Ferry Iron Works, stands on the river bank, but the chief part of the town is divided from the river side by an isolated rock called Warren Hill. Between this rock and the hills which form the eastern boundary of the valley there is a bay (so to speak) of deep peat, about a quarter of a mile broad, which towards the foot of the hills gives place to a sloping bank of gravel. The town occupies the hill-foot and the gravel slope, and also to a large extent the swampy peat land below, which is scarcely above ordinary high-water mark, and is considerably below the level of spring-tides. The marshes are frequently flooded, and the water saps and soaks the foundations of the low-lying houses. Marsh ditches, or "pills," receiving rills from the high ground, serve to carry off, sluggishly, the natural surface drainage when the tide is falling, but their common outlet (an arched culvert opening in the river bank) is not guarded by any valve, and as the tide rises it flows back in the pill and thus effectually prevents the proper drainage of the subsoil. These open marsh ditches have been adopted as the public sewers; refuse of all kinds, animal and vegetable, is thrown into them; where they lie conveniently along the back of a row of cottages it is the practice to empty into them the mixed contents of chamber-pots; this is found extremely convenient where the ditch is immediately adjacent to the house wall, so that the filth can be poured out from the narrow back windows. Slops and sullage are led by leaky box-drains into these open ditches, which in some places pass under the floors of dwelling-houses, in culverts which are occasionally choked up to the very crown, and all this seething filth regurgitates at every high tide. Much might be done temporarily to remedy this disgraceful state of things, by the simple expedient of fitting a flap-valve at the mouth of the culvert in the river bank; but then the town ought to be properly sewer'd and drained throughout. Some of the streets lying on the gravel bank above-named are fairly well sewer'd, but the sewers are said to be liable to the risk of becoming choked with sand, which is used in great quantities on the cottage-floors in this part of Wales. Three cartloads of sand are said to be sold in Briton Ferry every week. An old barrel-culvert, 3 ft. 6 ins. in diameter, was reported to have been choked with sand in about two years. The sand appears to become cemented by the sewage into a hard mass.

In the marshy parts it is found that the peaty soil yields under the weight of newly built houses, especially if the skin of turf has been removed before laying the foundation. Rows of cottages were pointed out to me which had sunk unequally, and some buildings (the board room for example) had declined several degrees from the vertical. It is apprehended that new sewer's of substantial brickwork would be in risk of sinking and settling in like manner, that joints would be broken, and leakage would take place. This is a question for an engineer to be consulted upon. The question is becoming urgent, for new streets are being carried out into the marsh, and a large swampy meadow was pointed out to me as destined to be covered with cottages. These swamps ought never to have been built upon at all; but now it is the duty of the Sanitary Authority to make them as wholesome as they can.

Besides having water at their foundations, a large number of the poorer class of cottages have no provision for carrying off the roof water, which therefore bathes the walls and adds to the general dampness of the dwellings. Many of the old rows belonging to the Iron Works are built back to back and are not properly ventilated.

On the lower side of the Neath Road there is a row of basement tenements below the level of the road opening away from the street, and unprovided with any means of ventilation at the back.

Where there is privy accommodation, it takes the form of seats over cesspits, and very filthy nuisances arise in consequence. There is no systematic removal of their contents. Where the nuisance-inspector in the course of his inspections finds a nuisance existing, he gives notice to the occupier to remove it. The Local Board have provided a cart for purposes of filth removal, and charge 2*s.* 6*d.* for the use of it on each occasion. This arrangement is one which rather encourages than prevents accumulation of filth.

The mining classes do not fully appreciate the advantages of privies. I was shown a cluster near the Iron Works which had been wrecked for firewood; roof, doors, scats, and floors had disappeared, and nothing remained but ruinous brick walls surrounding a perilous pit, which, however, was rapidly being filled with bricks dislodged from above. In the "Square" also I observed a group of nine privies (for 25 houses) that had been half-ruined by the users.

Street scavenging is carried out by six men with three carts, under the supervision of the Nuisance Inspector.

The water supply of Briton Ferry hitherto has been precarious in quantity, and inconveniently distant from the lower and middle parts of the town. It has been and is still in great part derived from hill-side streamlets and springs led in pipes to the side of the main road (which follows roughly the contour line of the hill-foot). There are several of these "pistills," as they are commonly called; they pass near dwellings in their upper course, and are on that account open to some suspicion of contamination. It is now proposed to supply the town throughout from the Neath Company's reservoir, and pipes have been laid for that purpose. There is some fear lest the supply from this source should prove insufficient for both towns together. The quality of the Neath water is satisfactory.

The conditions which are here described of accumulation and retention of human excreta in close proximity to dwellings, and of water supply liable to contamination thereby, are conditions most favourable to the spread of that form of fever (enteric) which has been seen to have been most prevalent in Briton Ferry.

The Sanitary Authority of Briton Ferry have no means of isolating any case of infectious disease. In 1872, when small-pox was present, assurance was given that steps would be taken in this direction, but nothing has been done. There is also a want of proper provision for disinfecting clothes, bedding, &c. that have been infected.

ABERAVON URBAN SANITARY DISTRICT.

This district is co-extensive with the municipal borough of Aberavon, and is under the sanitary jurisdiction of the Aberavon Town Council, who meet once a month. The Medical Officer of Health, recently appointed at a salary of 15*l.* a year, not under the Order of the Local Government Board, is Mr. J. H. Davies, who is also a District Medical Officer, and one of the Medical Officers of Health in the Neath Rural Sanitary District. The Nuisance Inspector receives 10*l.* a year.

The population in 1861 was 2,916; in 1871, 3,396; at present it is estimated at about 4,000.

The houses, stone-built and slate-roofed, are in some places in the upper part of the town built close against the hill-side, or with only a narrow area between, and show signs of habitual damp. The hill-side is so steep that the back doors are sometimes injured by stones rolling down from above. By the river-side there are some houses without any back doors or back windows. In a lower quarter of the town, in Charlotte Street, also known as Little Ireland, the class of dwellings is of a very poor order; two houses in this street are licensed as lodging-houses; each of them had two bed-rooms, a larger and a smaller; the larger room in one house, 12 feet square by 6 feet 6 inches high, held three beds, each slept in by two adults, who therefore had 156 cubic feet a-piece; in the other house the larger room was 12 feet by 9 feet, and 7 feet high, and was occupied by four persons, with 189 cubic feet a-piece.

Provision for carrying off roof-water is very defective in most parts of the town; the back yards as a rule are badly laid and very sloppy; the side channels for surface-water are of the rudest description, or none at all. In many places the footways are not paved.

Aberavon was systematically sewered in 1867-68, the place having suffered severely from cholera in 1866, as it had also previously in 1849. Before it was sewered the state of the town appears to have been very bad indeed. The head of the sewer lies by the side of the river, where it is guarded by a sluice which is occasionally raised, and the river-water admitted to flush the sewer. The sewer has a moderate fall, and ends at an outlet in the tidal part of the same river. The mouth of the sewer is guarded by a flap-valve. When the tide rises the air in the sewer must be forced back by the accumulation of sewage or possibly by the entrance of river-water at the joints of the valve; when the sewers were originally laid, provision was made for the escape of sewer-air at several gratings in the street (each with four apertures amounting together to 4 inches square); but of these gratings I found only two that were not choked with stones and dirt, and these two had each only one of its four apertures clear. But even if all these gratings were kept open, they would not amount to a sufficient provision for the ventilation of the sewer.

When the sewers were laid, the former cesspit system was abandoned throughout the town ; the cesspits were filled up, and the closets were converted into the simplest form of water-closet, requiring to be flushed by hand, and were connected with the sewer. This system has its own special nuisances : the pipes get choked or broken, and the funnel becomes loaded up to the brim ; or the same result arises from neglect of hand flushing. In the northern outskirts of the town there is a square of 52 houses, belonging to the owners of the copper works, and named Vivian Square ; three sides of this quadrangle have their privies external, connected with the sewer, but the fourth side, adjoining a public road, is provided with eight pail-closets, placed within the square ; the pails are removed and replaced once a week ; this is done by the owners ; this arrangement is unattended by any nuisance. In this square there might be better provision for house slops, which at present stagnate in a system of little ditches among the gardens inside the square ; a covered drain exists which would carry off these accumulations if the surface channels were properly laid. A pump stands in the centre of the square from which the inhabitants used to drink, but its purity was suspected when cholera visited this quarter, and on analysis the water was found impure, and the pump was chained up. It has lately been unchained again, for washing purposes, but cannot be considered safe as long as there is so much refuse matter, solid and liquid, littering the ground around the pump. The square is said to occupy what was formerly a swampy spot in the outskirts of the town, where quantities of town refuse used to be thrown.

The present water supply is derived partly from spouts and pumps at the foot of the hill, in the upper part of the town, and partly from a much frequented pump at the back of the "Duke of Wellington" public-house. It is impossible to be quite sure as to the purity of these waters. For this last-named water the people pay a penny a week, and go great distances to fetch it. It is much to be desired that the people should have a more convenient supply, and one which can be more safely relied on for purity. The Town Council have submitted a scheme of water supply to the Local Government Board, in which they propose to impound a stream up in the hills, to the east of Cwmavon, and bring it in a 6-inch main to Aberavon, and deliver it by gravitation, with constant service ; it is proposed then to supply all the water-closets with water. The reservoir is planned to hold a month's supply for the whole town. This water would, I believe, be free from all suspicion of contamination.

The Aberavon Sanitary Authority have no means of isolating any case of infectious disease, and no means of properly disinfecting any infected articles, such as clothes or bedding.

The public slaughter-house, outside the town, towards the marshes, appeared to be kept in good order.

The very high annual average fever death-rate (1·5) which marks this district (*see* Table IV.) is seen to be due chiefly to the number of deaths from fever in the year 1872. But even if that year had had only the average number of fever deaths, the rate would only have been reduced to 1·1. There is evidently yet much need of sanitary improvement in this district.

NEATH RURAL SANITARY DISTRICT.

In this is included the whole of the Neath Registration District, except the three urban districts already described. The Sanitary Authority are the Guardians of the Neath Union, who meet for sanitary business once a month.

They have (early in 1876) appointed the seven district medical officers to be Medical Officers of Health, under the Order of the Local Government Board, at salaries of 40*l.*, 35*l.*, 33*l.*, 25*l.*, 13*l.*, 11*l.*, and 10*l.* respectively (total 167*l.*).

There had previously been one Medical Officer of Health for the whole rural district, Mr. E. R. Morgan, to whose valuable reports I have already had occasion to refer.

There is one Inspector of Nuisances for the whole district, Mr. A. B. Campion, who also holds the office of Surveyor, and receives a salary of 200*l.* for the two offices combined.

The general physical characters of the district have been noticed in the first part of this report.

In respect of those conditions which affect the health of the people, it will be necessary to touch separately upon the chief villages in the district. There are, how-

ever, certain points of description which apply very generally throughout. The population is almost entirely a mining one, gathered into large villages round the mines or works which give them employment. In some places the miners own the houses they live in ; but in general they are the tenants of the company or firm by whom they are employed. In late years a great improvement has taken place in the character of the dwellings of the labouring class, more especially in the matter of ventilation, roof drainage, and privy accommodation ; but the older houses still exhibit the old disregard of such provision. The great defect, however, though that a defect which is likely before long to be remedied, is the want of an ample supply of good water. Abundance of pure water descends the hill sides, but unless it can be secured before it reaches the outskirts of habitation, it is spoilt at an upland farm or at a mine, and becomes useless. The people are driven to go long distances up the hills or into the woods, where they find some scanty trickling spring. The water of the rivers (Neath, Avon, Clydach) is contaminated from many sources, and so, probably in higher degree, is the water of the canals and "feeders" which are derived from those rivers. The "feeders" are streams led off (like mill-streams) for the supply of works lower down the valley ; they offer many facilities for the use of impure water, as they flow evenly and are conveniently approached.

Privies over cess-pits are in general use, but the great importance of removing human excrement as speedily as possible from the neighbourhood of human abodes is not yet generally understood in the district.

I may here note, as one of the wants of the entire district, that the Sanitary Authority have no means of isolating any case of infectious disease. It was represented to me by persons who were well acquainted with the character of the people that no one of the mining class would ever willingly go to a fever hospital, and that any attempt at compelling such removal would arouse the animosity of the whole population. However, the first step towards an improved feeling on this point would be the erection of a hospital, and the demonstration of its utility.

Taibach, in the south-east corner of the Union, a village of some 5,000 inhabitants, depending upon Messrs. Vivian's copper and tin works and coal mines, derives part of its water supply from a spring on the hill-side, which is guarded from injury, whence it is brought into the village in pipes. Two of the spouts at the time of my visit appeared to be nearly stopped. The people also drink from a "feeder" drawn from the river Frwydwyllt, and sometimes probably from that river where it flows through the village. Mr. Morgan, in his report for 1874, gives the particulars of an outbreak of enteric fever in Taibach in October 1873, which he clearly traces to a previous case of enteric fever in a cottage on the upper course of the Frwydwyllt. The utensils used by the fever patient in that cottage were washed in the stream which flows down to Taibach : about a fortnight later 10 persons in Taibach, all drinkers from the river or the feeder, were taken ill together ; upwards of 80 persons in all were attacked. The record of this outbreak appears in the death-returns for that quarter, when 14 deaths were registered from fever in the Margam sub-district. It did not appear that any steps had been taken to prevent the people from using this water.

There seemed here to be a want of proper means of carrying off slops, which consequently stood in pools about the dwellings. Among the older houses the means of ventilation are insufficient, and provision for roof-drainage is often wanting. In Upper Brick Row there was some want of privy accommodation.

Cwmavon, with a mining population of 6,000 or 7,000, lies on the same river as Aberavon, about two miles higher up its course, among the hills. Here, as at Taibach, many of the people drink from a "feeder" derived from the river ; to some rows, indeed, this water is laid on in pipes, and others have it close at hand. Last year there was a good deal of enteric fever here, about 25 cases and 4 deaths. I observed that the rows which had chiefly suffered were those which were supplied from the feeder. Following up this stream, it was evident that it was liable to contamination from many sources, being in fact a catch-drain for all the surface-drainage of the inhabited plots on the hill-side above.

Good water from the hills is brought in pipes to parts of the village on either side of the valley, and there is good reason for wishing that this supply should be extended to the rest.

Roof drainage is very deficient here.

Higher up the valley, at the little village of Pontrhydyfen (a picturesque spot, where

the feeder that goes to supply the principal works down the valley is carried by an aqueduct across a branch ravine), I saw the cottagers drawing water from the feeder a few yards below the point where others poured in their slops. Others here drink from hill-side spouts; one of these is below the terraced road of the village, and is encroached upon by the ashes and refuse that are thrown down the slope. Here are some very wretched dwellings, backed against the steep hill-side. Slops are allowed to run down a steep narrow lane from top to bottom.

At *Glyncorwg*, at the very head of one branch of the Avon, where a large mining population has rapidly risen, the people have to fetch water from a distance; the water is of good quality. The Sanitary Authority have submitted to the Local Government Board a plan for a reservoir on the hill-side above Glyncorwg, which would supply the wants of the whole village. Nuisances are found here in connexion with the disposal of slop water. Roof drainage is imperfect.

The parish of *Llangonoyd Higher*, on the eastern border of the district, includes a part of the populous place called Maesteg, the greater part of which belongs to the Bridgend Union, and is in the Urban Sanitary District of Cwmdû, under a Local Board. The Cwmdû Local Board have set on foot an attempt to obtain the annexation of the most populous part of the parish. This has caused delay in carrying out a good scheme of water supply which the Neath Rural Sanitary Authority had taken in hand.

In *Llantwit*, between Neath and Briton Ferry, there is a great deal of new building, and some of it has been carried on without proper provision for disposal of slops. Mansel Terrace is an instance of this, built on the hill-side, with the privies at an almost inaccessible height in the rear, and the slop-drain opening by the road-side at the lower end of the terrace, and then running down the road for a quarter of a mile and finally forming a large, filthy, stinking pond at the bottom, within the bounds of the Briton Ferry Urban District. The common pump stands in the course of the drain, and the water is liable to be and probably is contaminated thereby.

I mentioned above that there had been two deaths from enteric fever in Llantwit parish in 1876, and one in the first quarter of 1877. Two of these occurred in different families, at a cluster of cottages called Tonna. In one family there had been seven cases, one fatal. The first attacked was the youngest, a child just able to walk. The people here fetch water from the mouth of an old heading in the hill-side, about 200 yards distant. Though unprotected; the water is not likely to have been specifically polluted at this point; but the same water, on its way down a meadow, passes near the corner of a garden where a privy stands, and then skirts the yard-wall of the end cottage of the row; here a few bricks have been taken out of the wall, and the slops from that cottage are let out into the streamlet, which then passes immediately to a spout at the roadside accessible to children. The adults say they do not drink from this spout, but they cannot answer for the children.

At the head of the Vale of Neath is the village of *Ystradvelley*, with an agricultural population of about 700. This I did not visit.

Lower down are the villages of *Glyn Neath* and *Blaengwrach*, with mines and works adjacent. The attempt has been made to supply Glyn Neath with roadside pumps; but it has been found difficult to protect them from wanton mischief, and it would be better in many ways if water were conveyed from the hillside. Here, as elsewhere in the valley, refuse matter is thrown into the river. By the side of the canal there is a row of cottages called Maesmarchog Row, built back to back, and imperfectly ventilated.

At Blaengwrach steps are being taken to improve and protect the water supply, by leading it in pipes from above the village to a spout or tap in a convenient situation.

The little village of *Aberpergwm* contains some hovels in a wretched state of disrepair, not fit for human habitation.

At *Resolven*, the next village down the valley, with about 2,000 inhabitants, employed in mines and manufactures, the Sanitary Authority have undertaken the construction of a reservoir in a dingle in the hillside, which will give the people an ample supply of good water.

The newest rows of cottages have slop drains communicating with cesspools.

Aberdulais, below Resolven, a village of tin-plate workers, is ill supplied with water; a spout by the roadside was found quite dry. The people have to go more than half a mile to a spring in the road-side wood. It is believed that water could be brought to the population in this part of the valley from a dingle in the hill-side above. Some of the houses here are backed against the rock, without back windows. The privies are placed at the top of the river bank on the opposite side of the road.

Cadoxton, an old village with a prosperous brewery, is supplied with water from one tap in the street. Some way out of the village is the "Glebe land," with two long parallel rows of cottages, presenting some of the worst features that could be found in any part of the district; good water is distant; the roof drains are in ruins; the slops are soaking at the back-doors; the privies, a double row down the middle between the two rows of cottages, were placed along the line of a drain-pipe by which they were supposed to be drained into a large cesspool at the lower end. The drain had become choked or broken at several points in its course, and the privies with rare exceptions were gorged and flooded in a most abominable manner. Undrained cess-pits under seats, with all their offensiveness, would have been far better than this: but the situation plainly demands the use of removable water-tight pails. How free from nuisance such a system is found in its practical working may be seen in the neighbouring sanitary district of Aberavon, in Vivian's Square.

It remains to notice the important mining centre, of which different parts go by the different names of Neath Abbey, Skewen, and Cwmdû, with a rapidly increasing population of between 3,000 or 4,000. The water supply hitherto has been very unsatisfactory, of doubtful quality, and inconveniently distant. There is now the prospect of great improvement in this respect, for the Neath Water Company have taken in hand the formation of a new reservoir on this (west) side of the valley, expressly for the supply of this population.

In this part of the district very good and durable channels for slops and surface water are constructed of the moulded slags from the copper smelting works, each about 18 inches long by 10 broad and 10 deep; these are laid so as to form a trough, in section like a right-angled V; however little water there may be, it is sure to run in a body, and will keep its own channel clear, when, if spread over a larger surface, it would have been retarded and sediment would have been deposited. These smaller surface-channels discharge into a larger channel, similarly troughed, with a steep fall, where formerly there was a succession of reeking pools. Now, this trough-sewer keeps itself clear, till it reaches level ground, where the channel becomes partly choked with solid matters that have been thrown in. One of the scavenging staff might easily keep this clear from time to time. In Cwmdû, among the newest rows, the disposal of slops is as yet much neglected. Scarlatina, of a malignant type, has recently visited this quarter; it has long been hanging about in other parts of the district. The Medical Officer of Health advised precautions to be taken as to re-admitting to school children coming from the infected row; I did not hear that any further steps were taken in the matter. In April of this year enteric fever also appeared in Cwmdû. In these cases no steps had been taken for disinfection, except that one of the inspector's men had sprinkled a little disinfectant powder about the slop drain, outside the back-door. The discharges from the sick were not disinfected. This is a point which it is especially the duty of a Medical Officer of Health to give attention to.

I must here remark that the Medical Officers of Health in this Rural Sanitary district do not adequately carry out the instructions of the Local Government Board. They keep no books to receive record of any action they take, and do not report to the Local Government Board outbreaks of infectious disease.

In connexion with the sanitary deficiencies here described, more especially the imperfect arrangements for excrement removal and the present bad water-supply, attention must again be drawn to the high fever death-rate (1·1) which has long prevailed in the district. The reduction of this high death-rate is to be looked for from the continued action of the Sanitary Authority.

HUBERT AIRY.

July 1877.

Recommendations.

NEATH URBAN SANITARY DISTRICT.

1. The sewers require to be ventilated by numerous open gratings ; in narrow courts and confined places where open gratings might be offensive, shafts in direct connexion with the sewer should be carried up above the eaves and at least several feet above the level of any neighbouring windows.
 2. The Sanitary Authority, either alone or in combination with a neighbouring Authority (most naturally with the Neath Rural Sanitary Authority) should become possessed of some building to be used as an infectious-diseases hospital. With such a building might suitably be associated the chamber or apparatus which ought to be provided for disinfecting clothes, &c.
 3. The slaughter-house should be kept so as not to give offence. The arrangements in connexion with the removal of dung and offal require improvement.
 4. It is desirable that owners and occupiers of houses should be advised of the importance of securing in and about all houses the following conditions of wholesomeness :—
 - (a.) Proper ventilation of houses by means of back doors and windows ;
 - (b.) Proper guttering and spouting to all eaves of dwellings ;
 - (c.) Proper paving of the ground at the foot of every house-wall, as protection from damp.
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Recommendations.

BRITON FERRY URBAN SANITARY DISTRICT.

1. Proper steps should be taken to prevent any back flow of the tide in the “pill.” This should be done without delay. Skilled engineering advice should then be sought as to the best plan of sewerage for the town.
 2. As the present system of excrement-disposal keeps up a constant nuisance, it is much to be desired that the Local Board should undertake, by men appointed to that duty, the regular removal of night-soil, and for that purpose should introduce removable water-tight pails, such as may be seen in Vivian’s Square in Aberavon. On this subject reference should be made to the official report on Certain Means of preventing Excrement Nuisances in Towns and Villages.
 3. A good supply of pure water is greatly wanted.
 4. The Sanitary Authority should have some fit place in which they can isolate any case of infectious disease. They should also have apparatus for disinfection.
 5. It is desirable that owners and occupiers of houses should be advised of the importance of securing in and about all houses the following conditions of wholesomeness :—
 - (a.) Proper ventilation of houses by means of back doors and windows ;
 - (b.) Proper guttering and spouting to all eaves of dwellings ;
 - (c.) Proper paving of the ground at the foot of every house-wall, as protection from damp.
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Recommendations.

ABERAVON URBAN SANITARY DISTRICT.

1. Common lodging-houses must be kept under more strict inspection, and over-crowding must be prevented.
2. The existing ventilation gratings over the sewers should be kept clear of dirt. Additional gratings should be put in at other places in the course of the sewers ; and where necessary, in narrow courts and confined places, shafts should be connected with the sewer, and carried up above the eaves and windows of the neighbouring houses.
3. More frequent and thorough removal of privy and slop-nuisances should be carried out under more strict inspection.
4. By carrying out (if it should be sanctioned) the scheme which they have submitted to the Local Government Board, or in some other way, the Sanitary Authority should provide the townspeople with an ample supply of good water.

5. The Sanitary Authority should have some fit place in which they can isolate any case of infectious disease. They should also have proper apparatus for disinfection.
 6. It is desirable that owners and occupiers of houses should be advised of the importance of securing in and about all houses the following conditions of wholesomeness :—
 - (a.) Proper ventilation of houses by means of back doors and windows ;
 - (b.) Proper guttering and spouting to all eaves of dwellings ;
 - (c.) Proper paving of the ground at the foot of every house-wall, as protection from damp.
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Recommendations.

NEATH RURAL SANITARY DISTRICT.

1. In most places in the district a better supply of water is wanted. For many of them the Sanitary Authority already have schemes in hand ; for others, e.g., Taibach, Cwmavon, Glynneath, and Aberdulais, further provision will be required. At Taibach and Cwmavon the important thing is that the use of water from the "feeders" should be discontinued. At Tonna the streamlet should be made safe from pollution.
 2. The privy nuisances at Glebeland in Cadoxton parish must be abated. This would be a good opportunity for introducing a system of movable water-tight receptacles, large pails or pans, which should be emptied regularly, say, once a week. This plan, if found successful, might with advantage be extended, for the present cesspit system causes great nuisance.
For information on these points I would refer the Sanitary Authority to the official report on Certain Means of preventing Excrement Nuisances in Towns and Villages.
 3. Slop-drainage, where there is no public sewer, as at Mansel Terrace, should be led into a cesspool, or otherwise dealt with so as not to cause nuisance.
 4. The Sanitary Authority should have some fit place or places in which they can isolate any case of infectious disease.
They should also have apparatus for disinfection.
 5. The attention of the Medical Officers of Health requires to be called to the Official Regulations as to the duties of Medical Officers of Health, more especially as regards systematic periodical inspection of the district ; measures for preventing extension of infectious disease ; entries in journal ; and information to the Local Government Board of any outbreak of dangerous infectious disease.
 6. It is desirable that owners and occupiers of houses should be advised of the importance of securing in and about all houses the following conditions of wholesomeness :—
 - (a.) Proper ventilation of houses by means of back doors and windows ;
 - (b.) Proper guttering and spouting to all eaves of dwellings ;
 - (c.) Proper paving of the ground at the foot of every house-wall, as protection from damp.
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